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BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE
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In cooperation with State, Federal and Other Agencies

COTTON INSECT CONDITIONS FOR WEEK ENDING JULY 1, 1949
(Third Cotton Insect Survey Report for 1949)

No shortages of insecticides or dusting equipment for cotton insect control have been reported this season but in several States the entomologists fear that the insecticide supplies may not meet the demands if the boll weevil is not checked by hot, dry weather.

No cotton leafworms have been reported. It is unusual for the cotton leafworm not to make its appearance in Texas during April, May, or June. It was reported before the end of June each year since 1933.

In all the states east of Texas and Oklahoma weather conditions during June were not favorable for holding the boll weevil in check. In most areas where the boll weevil occurs the situation is extremely serious, in some areas more serious than for many years. Unless the weevils are checked by hot, dry weather or insecticides they are likely to destroy much cotton during July and August.

Serious bollworm outbreaks now occur in the cotton fields of the Lower Rio Grande Valley of Texas and in the Pecos Valley of New Mexico. Bollworms have been reported from most of the cotton-growing states but there is some doubt as to just what species are involved. Only a few specimens of the bollworm, Heliothis armigera (Hbn.) have been submitted for determination. There are several other species of lepidopterous larvae that attack the squares and bolls that are apparently more abundant in some areas than the bollworm.

Excerpts from Weekly Cotton Weather Bulletin issued by the Weather Bureau, U. S. Department of Commerce, New Orleans, Louisiana, June 28,

TEXAS: Insects more numerous Central, North - Showers interfered with poisoning.

OKLAHOMA: Favorable for weevils, grasshopper, fleahopper damage, much poisoning activity.

ARKANSAS: Favorable for weevils.

LOUISIANA: Favorable for weevils with some damage.

MISSISSIPPI: Weather continued favorable for weevils, infestations, some damage.

ALABAMA: Weevil infestation - cotton fields heavy - control measures begun.

GEORGIA: Very favorable for weevils.

SOUTH CAROLINA: Recent weather favorable for checking weevils - poisoning active.

NORTH CAROLINA: Little weevil infestation reported.

ARIZONA: Dusting for insects Pima and Maricopa Counties.

TENNESSEE, MISSOURI, CALIFORNIA, NEW MEXICO: No comments concerning cotton insect conditions.

THE TEXAS WEEKLY CROP AND WEATHER BULLETIN, Austin, Texas, June 27 states, "Insects were becoming more numerous in many northern, central, and northwestern areas, and showers interfered with poisoning operations."

BOLL WEEVIL

VIRGINIA: No reports have been received in regard to the boll weevil situation in the cotton-growing counties of southeastern Virginia. However, it is probable that the weevils are now abundant in many of the Virginia cotton fields as all of the 15 fields examined in Northampton, Hertford, and Halifax Counties in North Carolina adjacent to Virginia were infested with weevils. Northampton County had more than 50% of the squares punctured in 1 field and the average of 5 fields examined was 36% punctured squares. In Halifax County 1 field had more than 25% punctured squares and the average for the 5 fields was 16% punctured squares. In Hertford County the average of the 5 fields examined was 13% punctured squares. Unless checked by hot, dry weather or the proper use of insecticides the boll weevil is likely to cause more damage to the cotton crop in Virginia than any year since 1939.

NORTH CAROLINA: Boll weevils were found in all of the 101 fields examined in 20 counties and no field had less than 10% of the squares infested. The heaviest infestations reported were in Hoke, Robeson, Scotland, Sampson, Northampton and Harnett Counties. The Weekly Report on Cotton Insects No. 4 issued by the Extension Service at Raleigh for the week ending July 1 states: "About 80% of the 101 fields examined were found to be in need of dust applications. The average square infestation for the week in the 20 counties checked was 26.83%, while last year at the same time, only 2.27% of the squares in the same counties had been punctured. In view of the present high infestation, dusting to control weevils is highly desirable and many farmers are carrying out this dusting program."

SOUTH CAROLINA: Boll weevils are continuing to emerge from hibernation at Florence. Eleven weevils were removed from the cages as compared with 6 the previous week. A total of 509 weevils have been removed from the cages to date as compared to 8 in 1948; 147 in 1947; and 91 in 1946.

The emergence of boll weevils into a one-fifth acre trap plot of cotton decreased during the week. Only 46 were collected from the plot as compared with 126 the previous week. A total of 1440 weevils have been removed from the trap plot to date which exceeds the number collected from this plot during any year since records were started in 1938. The trap plot records are as follows:

Year	Weevils Collected	Year	Weevils Collected
1949	1440	1943	518
1948	450	1942	545
1947	1092	1941	1115
1946	365	1940	55
1945	563	1939	741
1944	150	1938	380

The average infestation in 93 fields in 19 counties was 28% punctured squares as compared with 12% in 1948. Punctured squares were found in all fields examined and only 5 fields had less than 10% punctured squares. In 40 fields from 11 to 25% were punctured; in 39 fields from 26 to 50%; and in 9 fields more than 50% of the squares were punctured.

In two unpoisoned fields in Bomberg County 50% of the squares were punctured as compared with 8% in 6 fields which had been dusted with insecticides one or more times. In 22 fields in Barnwell County which had received 3 or 4 applications of insecticide the infestation averaged 5% punctured squares as compared with 34% in 9 unpoisoned fields. (J. G. Watts, July 2)

GEORGIA: Rains and mild temperatures over most of the State were very favorable for weevil development and weevils are abundant in all sections. The average infestation in 304 fields in 97 counties was 14% punctured squares. Weevils were found in all but 10 fields in Ware, Mitchell, Lowndes, Appling, Bulloch, Screven, Telfair, Warren, Jones, and Murray Counties. In 81 fields less than 10% of the squares were punctured in 102 fields from 11 to 25%; in 66 fields from 26 to 50%; and in 45 fields more than 50% of the squares were punctured. At this date in 1948 the highest infestation reported was 1 field with 26% punctured squares and only 23 of the 155 fields examined had 10% of the squares punctured.

ALABAMA: W. A. Ruffin, Extension Entomologist, wrote on June 29; "Weather conditions in Alabama have continued cloudy with showers all week. This means that conditions are ideal for the emergence of adults of the first generation of weevils. Adults of the first generation of weevils are emerging in the extreme southern part of the State. The indications are that in central Alabama adults will begin to emerge during the first week of July.

"The sales of insecticides for use in dusting cotton are far above normal for this time of year. Indications are that farmers will do a much better control job this year than they have in previous years."

TENNESSEE: On June 30 Dr. J. O. Andes of the Extension Service wrote "We have a fairly heavy infestation of boll weevils in certain localities in counties along the Mississippi line." Boll weevils are abundant now in the northern counties of Mississippi adjacent to Tennessee. During the past week weevils were found in all of the five fields examined in De Soto County, Mississippi, just south of Memphis, Tennessee with an average of 26% of the squares punctured. The highest infestation was 42% punctured squares. Weevils were reported during June in Alcorn, Marshall, and Tippah Counties, Mississippi, that are adjacent to Tennessee.

MISSISSIPPI: Clay Lyle, Entomologist, reported on July 5: "With rains continuing through the past week in most sections of Mississippi, prospects for a cotton crop were very discouraging. Inspectors of the Board and Federal entomologists examined 411 fields in 49 counties, finding weevils on 367 with an average infestation of 30% which compares with 30% last week and 13% a year ago on this date. Several fields were reported to have 100% infestation.

"About the only areas in the State where damaging infestations were not present were some previously flooded sections of the Delta and some localities in the southern part of the state where little or no cotton was grown last year. All through the central and north central sections very high infestations were recorded."

The boll weevil situation was reported as more serious in the Delta Counties of Mississippi during June than during any of the previous 15 years. Weevils were found in 203 of the 239 fields examined in 16 Delta Counties with an average of 19% punctured squares in the infested fields. A year ago during the last week of June weevils were found in only 115 of the 315 fields examined and the average rate of punctured squares in the infested fields was 12.6%. The highest infestation reported the last week of June 1948 in the Delta was a field in Yazoo County with 41% punctured squares. This year 28 fields had 41% or more of the squares punctured -- 9 fields in Yazoo County, 5 in Warren, 5 in Sharkey, 4 in Holmes, 3 in Issaquena, 1 in

Washington, and 1 in De Soto in the northwest corner of the State.

In addition the Delta and Pine Land Company in southern Bolivar County reported that weevils were found in 297 of 309 fields examined and 23 of the fields had more than 50% of the squares infested.

It should be noted that boll weevils are almost as abundant in the northern counties of the Delta as in the southern counties. No fields were examined in Tate County but weevils were found in 37 of the 43 fields examined in De Soto, Tunica, Panola, Quitman, and Coahoma Counties, including all of the 10 fields examined in De Soto and Panola Counties and in 9 of the 10 fields examined in Tunica County.

LOUISIANA: Rains occurred in most areas of the State and in general weather conditions remained favorable for weevil development. Boll weevil infestation counts made in 312 fields in 17 parishes averaged 13% punctured squares as compared to 7% a year ago at this time. No punctured squares were found in 20 of the fields examined; in 149 fields less than 10% of the squares were punctured; in 97 fields from 11 to 25%; in 38 fields from 26 to 50%; and in 8 fields in Bossier, Morehouse, Madison, Tensas, and Concordia Parishes more than 50% of the squares were punctured.

Considerable spot poisoning has been reported in northern Louisiana. However, only a very small percentage of the acreage has been dusted.

No shortage of poisons has been reported in Louisiana; however, the supplies reported appear to be small in view of the possibility of a long poisoning program against weevils.

ARKANSAS: The boll weevil infestation in 48 fields in 6 southeastern counties averaged 41% punctured squares as compared with 5% during the same week in 1948; 13% in 1947; 5% in 1945; and 10% in 1943. No records were made in 1946 and 1944. No weevils were found in 4 of the 48 fields examined. In 5 fields less than 10% of the squares were punctured; in 9 fields from 11 to 25%; in 20 fields from 26 to 50%; and in 10 fields more than 50% of the squares were punctured.

The average weevil infestation in 14 fields in 3 southwestern counties was 31% punctured squares. Punctured squares were found in all fields examined. In 3 fields less than 10% of the squares were punctured; in 4 fields from 10 to 25%; in 3 fields from 26 to 50%; and in 4 fields more than 50% of the squares were punctured.

Showers and rains were spotted in southeastern Arkansas but were general in the southwestern areas, thus making conditions favorable for weevil development. Poisoning was reported in some fields in both areas.

TEXAS: Boll weevils are increasing in central and northern areas but remain extremely low in southern and coastal areas. The average infestation in 71 fields in McLennan and Falls Counties that had been dusted or sprayed was 3% punctured squares as compared with 20% in 43 untreated fields. The fields inspected early in the week had not had time to reflect increases due to first generation weevils but all fields inspected during the latter part of the week showed increases even though plant fruiting had increased. Square infestation records were made in late-planted cotton and most fields showed enough infestation for potential weevil build-up. Weather conditions were favorable for weevil development throughout the week.

Cotton is maturing in the Lower Rio Grande Valley and squares are becoming scarce in many fields. Due to the scarcity of squares and to a slight increase in weevil populations the infestation in 135 fields in Cameron, Hidalgo, and Willacy Counties showed an average of 10% punctured squares as compared with 6% the previous week. The infestation was 38% at this time a year ago.

OKLAHOMA: One hundred and forty-five fields in 23 counties were examined. Seventy-nine were in eastern Oklahoma and 66 in central and western Oklahoma. Thirty of the fields in central and western Oklahoma were found to be infested with weevils and 53 in eastern Oklahoma. Fields with more than 50% of the squares punctured were found in Pushmataha, Pittsburg, Haskell, Le Flore, Wagoner, Muskogee, Okfuskee, Creek, Love, Pottawatomie, and Lincoln Counties. (C. F. Stiles, July 2)

BOLLWORM

TEXAS: In the Cotton Insect Pest Survey Report No. 13 of the Lower Rio Grande Valley, issued at San Benito, on June 30, Herman S. Mayeux states "Field examinations showed that as much as a half bale per acre has been destroyed by bollworms in the hardest hit fields." Heavy bollworm infestations were reported in Willacy, Hidalgo, and Cameron Counties.

COTTON FLEAHOPPER

LOUISIANA: Cotton fleahoppers and tarnished plant bugs are causing damage in some fields in northern Louisiana. Sweeping records made in 30 fields in Madison Parish averaged 14 fleahoppers, 8 tarnished plant bugs and 5 rapid plant bugs per 100 sweep.

ARKANSAS: Cotton fleahoppers averaged 5 per 100 terminals in 14 fields in 3 southwestern counties. Sweepings made in 11 fields in 6 southeastern counties averaged 7 fleahoppers and 5 tarnished plant bugs per 100 sweeps. Infestation was found in 10 of the 11 fields swept.

TEXAS: Cotton fleahopper infestations continued to be light in most fields in McLennan and Falls Counties.

MISCELLANEOUS INSECTS

SOUTH CAROLINA: Click beetles, Elateridae, are often found feeding on the foliage of cotton and their larvae, wireworms, feeding on the roots at times cause serious damage to stands of cotton. R. L. Walker collected two species of click beetles, Cenoderus lividus (DeG.) and Conoderus vespertinus (Fab.) from cotton in Marion County on June 6 and the latter species from Chesterfield County on June 13. Although the common name of C. vespertinus is "tobacco wireworm" it occurs so generally on cotton that it might also be called the cotton wireworm or cotton click beetle.

NEW MEXICO: Edwin J. O'Neal, Extension Entomologist, submitted beetles on June 23 that were reported as causing considerable damage to cotton in the vicinity of Tucumcari, Quay County, New Mexico. The beetles were determined by H. S. Barber as Colaspoides opacicollis Horn. of the family Chrysomelidae.

TEXAS: The Texas harvester ant, Pogonomyrmex barbatus var. molefaciens Buckley (Det. by M. R. Smith) was submitted by Herman S. Mayeux, San Benito, Texas. The ants were collected at Raymondville, May 16, 1949. On May 24 Mr. Mayeux wrote "Harvester ants clear surface of ground of all vegetation for radius up to 12 feet around entrance of nest. Twenty-five or more colonies per acre of cotton reduce stand considerably. Ten percent chlordane dust applied in heavy coat for radius of two feet around nest is excellent for eradication of colony."

The cabbage looper, Trichoplusia ni (Hbn.), is feeding on the foliage of cotton in the Lower Rio Grande Valley. J. N. Crisler of the Division of Pink Bollworm Control submitted 18 lepidopterous larvae taken from cotton in Mexico. Seventeen of these insects proved to be the cabbage looper, Trichoplusia ni and there was one bollworm, Heliothis armigera.

In the Cotton Insect-Pest Survey Report No. 13 from the Lower Rio Grande Valley, issued on June 30, Herman S. Mayeux states "Looper caterpillars are ragging leaves in a few fields." When the cabbage looper feeds on cotton foliage farmers often mistake it for the cotton leafworm.

ALABAMA: On June 10 Calvin M. Jones submitted lepidopterous larvae from cotton in several counties in southern Alabama, including the tobacco budworm, Heliothis virescens (F.), from Henry and Coffee Counties, the yellow-striped armyworm, or cotton boll cutworm, Prodenia ornithogalli Guen., from Geneva County, the salt-marsh caterpillar, Estigmene acrea (Drury), from Coffee County, another woolly bear caterpillar (undetermined) from Russell County, and Platynota sp. of the family Tortricidae from Barbour County.

INSECTS ON IRRIGATED COTTON OF THE SOUTHWEST

ARIZONA: Stink bug and Lygus spp. populations are increasing in cotton fields in the Salt River Valley. Large scale dusting for Lygus is general in most of the earlier planted fields. In Pinal County the injurious hemipterous insects continue low. The insects were present in sufficient numbers in a few fields in the Eloy area to warrant control. Stink bugs and Lygus spp. are beginning to migrate into cotton fields from alfalfa and other host plants in several areas of the Santa Cruz Valley. Preparations are under way to begin dusting for their control in the Marana area.

NEW MEXICO: A general infestation of bollworms has appeared throughout the Pecos Valley (Chaves and Eddy Counties). The heaviest infestations are around Carlsbad. Some control measures are under way and general control is planned.

TEXAS: Sweepings made in the El Paso Valley averaged 7 injurious hemipterous insects per 100 sweeps as compared with 14 the previous week. The decrease in populations was due to poison applications on some of the fields. Bollworms were noted in a few spotted areas. The sweepings showed high populations of beneficial insects including lady beetles, lace-winged flies, Orius insidiosus, Geocoris spp. and Nabis spp.

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